Mitigation Sequencing

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Aspect CONSULTING

Overview

- Goal of mitigation sequencing
- Case studies around “time”, “space”, and “effort”
  - Town of Twisp
  - Lake Roosevelt Program
  - Kittitas County
  - Chelan County
- Criteria around avoidance, minimization, and compensation

Mitigation Sequencing in ESSB 6091

Sequenced approach

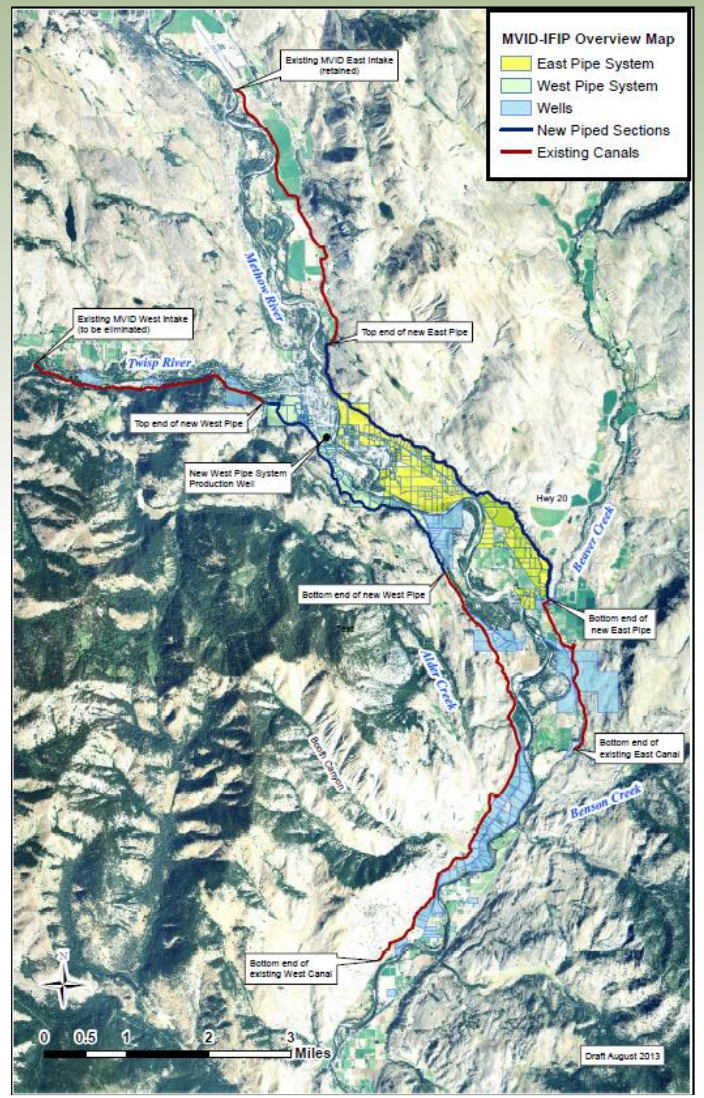
- Avoid impacts
- Minimize impacts
- Compensate for impacts by providing net ecological benefits to fish and aquatic resources

Twisp Mitigation Example (How hard can it be?)

Methow Valley Irrigation District (MVID), Ecology, and Twisp

- **1997 Supreme Court case on abandonment reduced Twisp water rights from 610 acre-feet to 224 acre-feet**
- **For next 18 years, Twisp:**
  - **Conserved water (leak reduction, rate increases)**
  - **Tried to buy water rights**
  - **Investigated water reclamation**
  - **Leased water from MVID**
- **Location and seasonality of rights available not perfectly matched to Twisp municipal need**

Twisp Mitigation Example



Methow Valley Irrigation District (MVID), Ecology, and Twisp

- **MVID Rehabilitation Project ($10M)**
- **Piping east and west canal, well conversions, river diversion removed**
- **11 cfs (2,854 ac-ft) savings in Twisp River, 2 cfs (360 ac-ft) in Alder Creek, reach benefits in Methow River**
- **Seasonal transfer of consumptive use to Twisp for year-round municipal use**
- **OCPI used to cover season of use impacts (0.05 cfs)**
- **Twisp 20-year growth now secure**

Twisp Mitigation Example (How hard can it be?)

- Effort high (all alternatives evaluated)
- Water for water found
- In place found
- In time not found
  - Net environmental benefits agreed to by fisheries co-managers

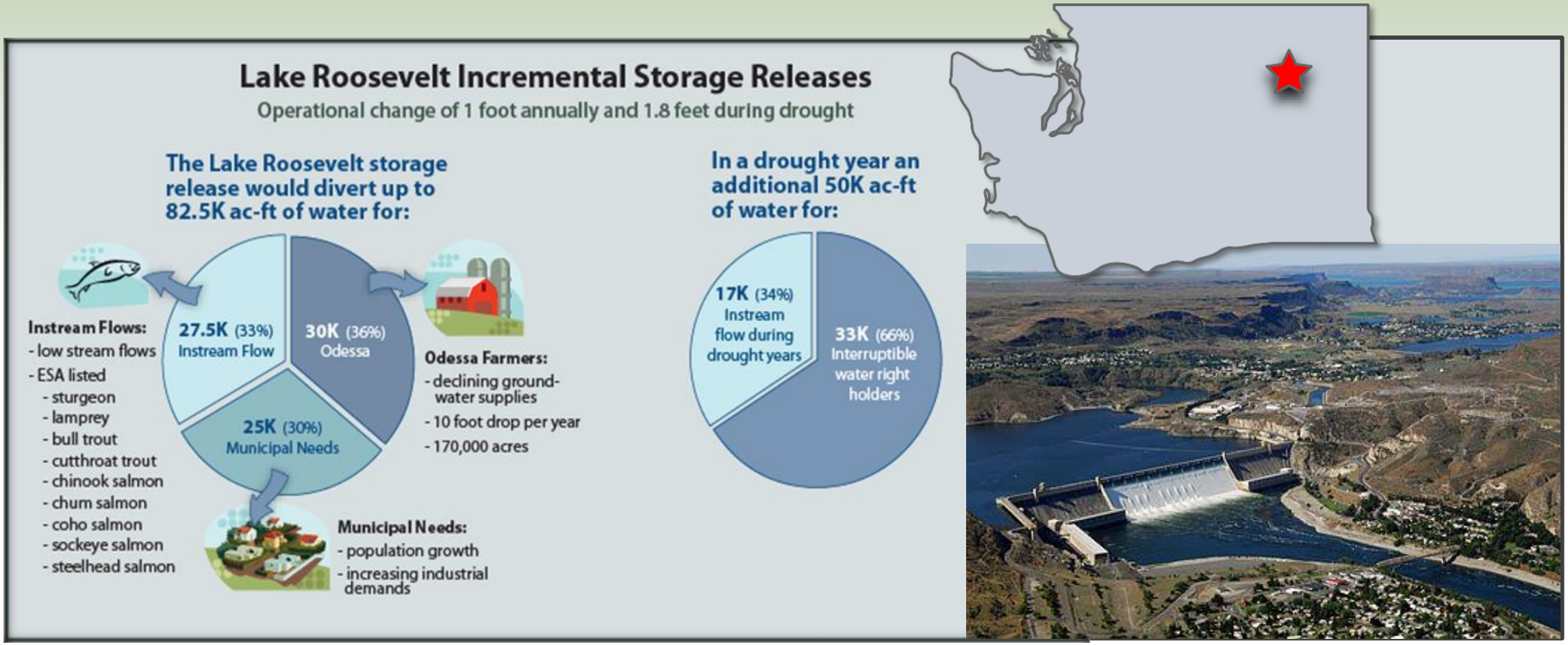
Columbia River Mitigation Example

How a source is managed can help determine what acceptable mitigation is:

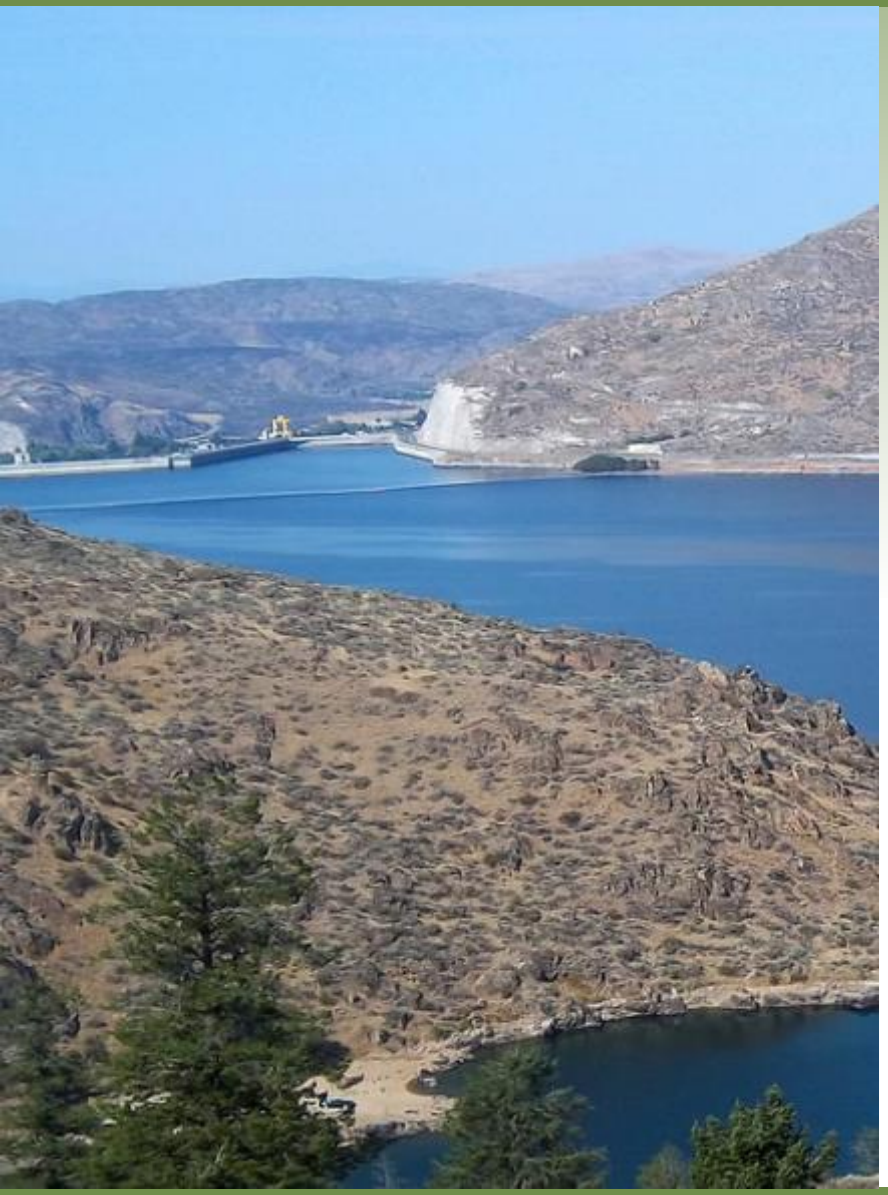
WAC 173-563-020: Any water right application . . . will be evaluated for possible impacts on fish and existing water rights. The department will consult with appropriate local, state, and federal agencies and Indian tribes in making this evaluation. Any permit which is then approved for the use of such waters will be, <u>if deemed necessary</u>, subjected to instream flow protection or mitigation conditions determined on a case-by-case basis through the evaluation conducted with the agencies and tribes.

Columbia River Mitigation Example

Ecology/Reclamation uses surface storage to bank new water supplies via long-term water service contracts



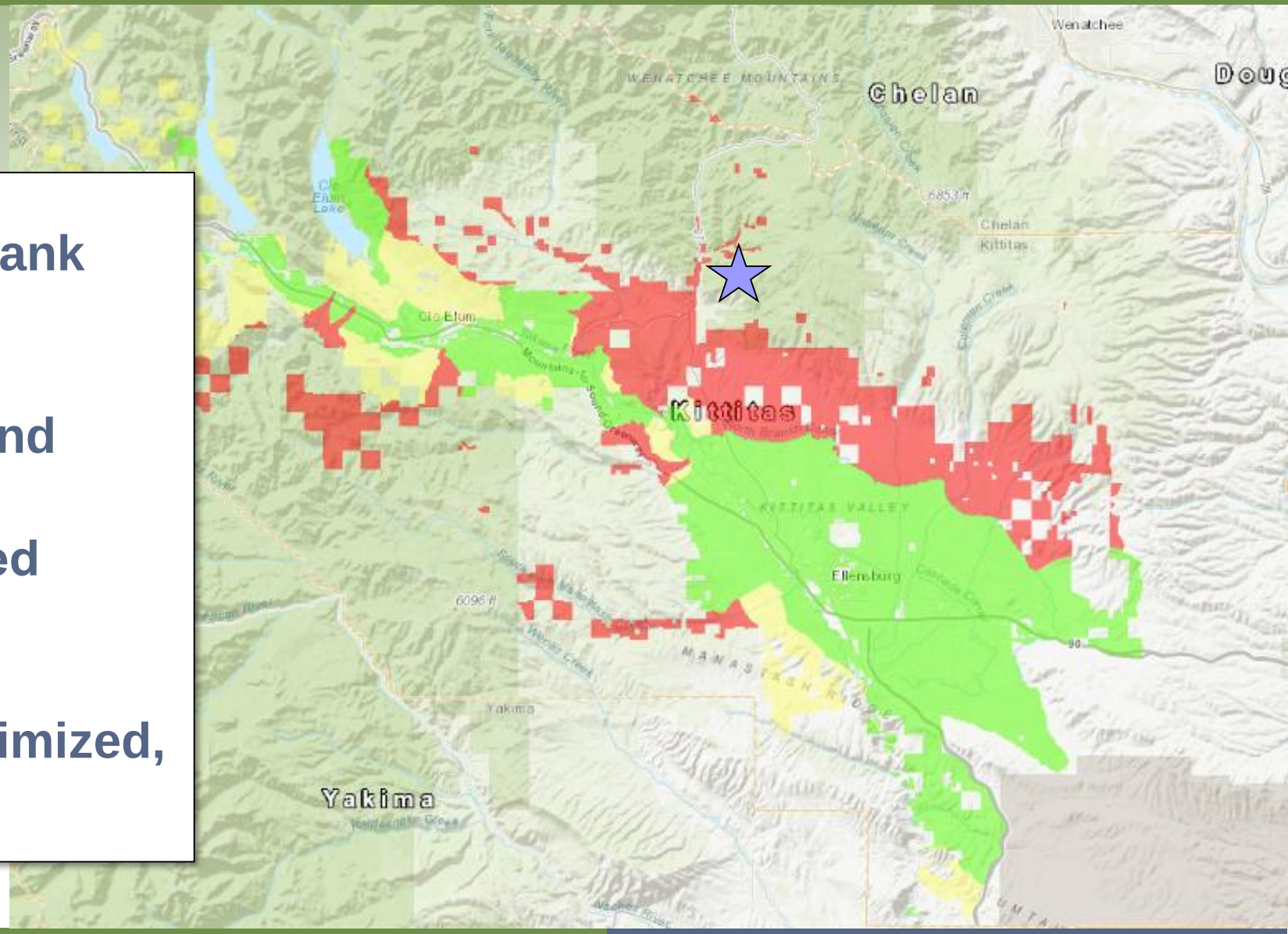
Lake Roosevelt Program Mitigation Example



- **Effort high (all alternatives evaluated)**
- **Water for water found**
- **In place found**
- **In time not found**
  - **Net environmental benefits agreed to by fisheries co-managers**

Kittitas County Consumptive Use Pilot

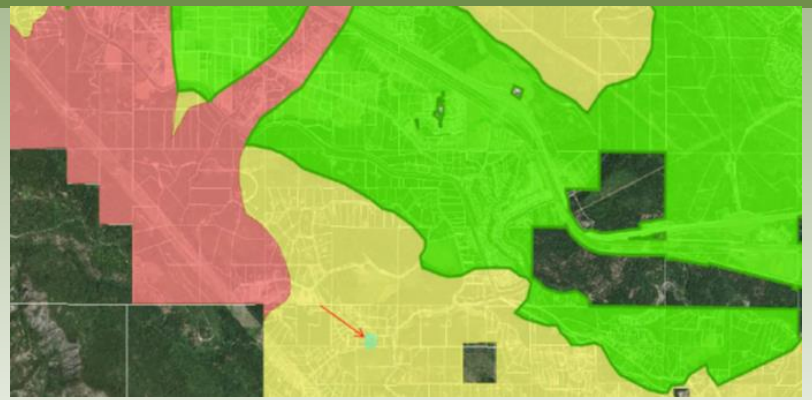
- Kittitas County Water Bank (Reecer Creek)
- Regional mitigation found
- “Yellow” and “Red” need additional mitigation
- If consumptive use minimized, mitigation minimized.



Kittitas County/Deneen Consumptive Use Pilot

Pilot elements

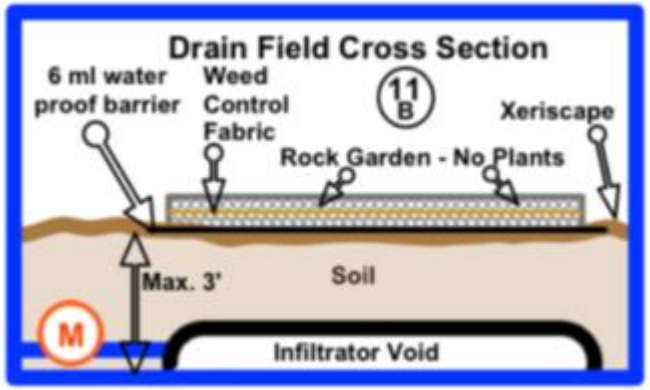
- **Well supplies houses**
- **Indoor use metered; outdoor use prohibited**
- **Septic tank effluent metered**
- **Consumptive use replaced with trucked water infiltration from outside the subbasin**



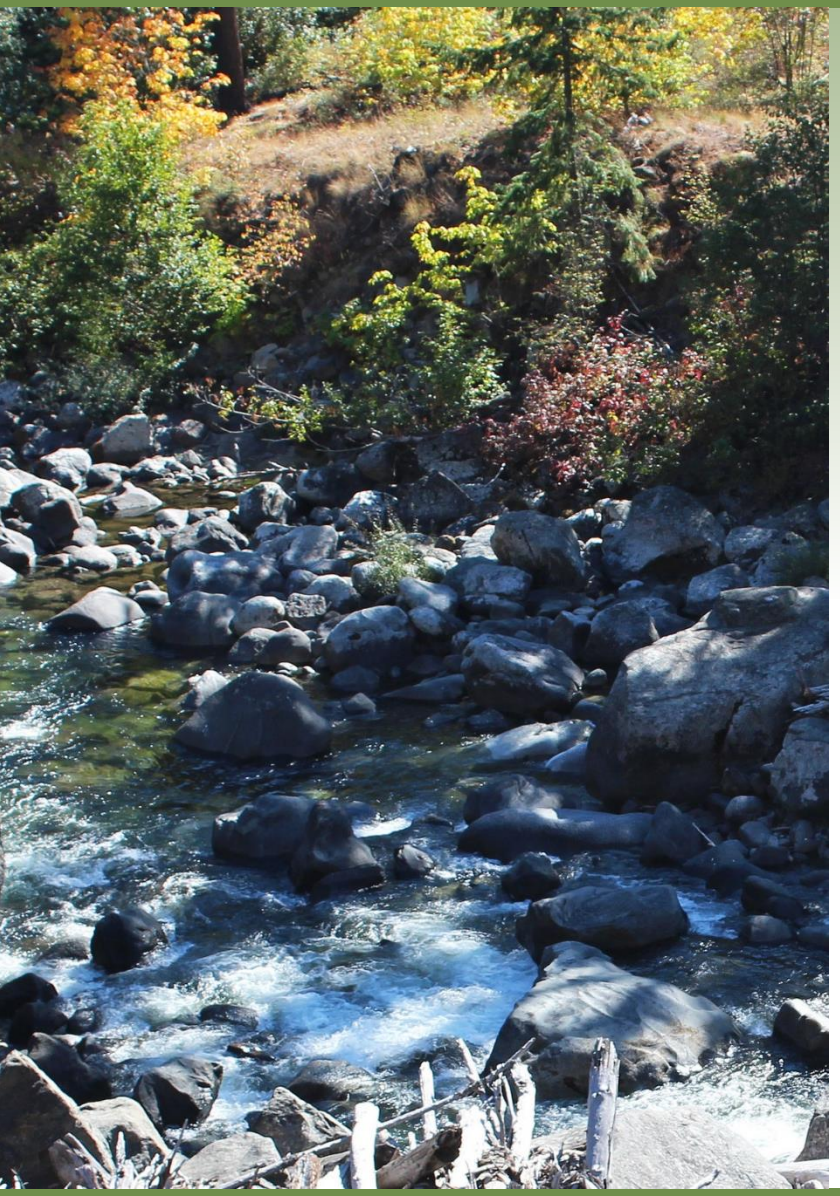
Source: www.Cliftonwater.com

Indoor Consumptive Use Estimates

- 20-30% CU (Upper Kittitas Rule, WAC 173-539A, 2011)
- 10% CU (USGS, 2012, Chamokane Creek)
- 10% CU (Ecology, Culhane and Nazy, 2015)
- 10% CU (USGS, 2016, Kitsap Peninsula)
- 10% or case-by-case (Ecology 6091 Guidance, 2018)
- **5.38% or less (Kittitas County/Deneen Pilot Goal, 2018)**



Kittitas County Mitigation Example



- **Effort high (in kind alternatives evaluated)**
- **Water for water found**
- **In place found**
- **In time found**
- **Measurement of impacts at the local level helps target mitigation and reduce costs**

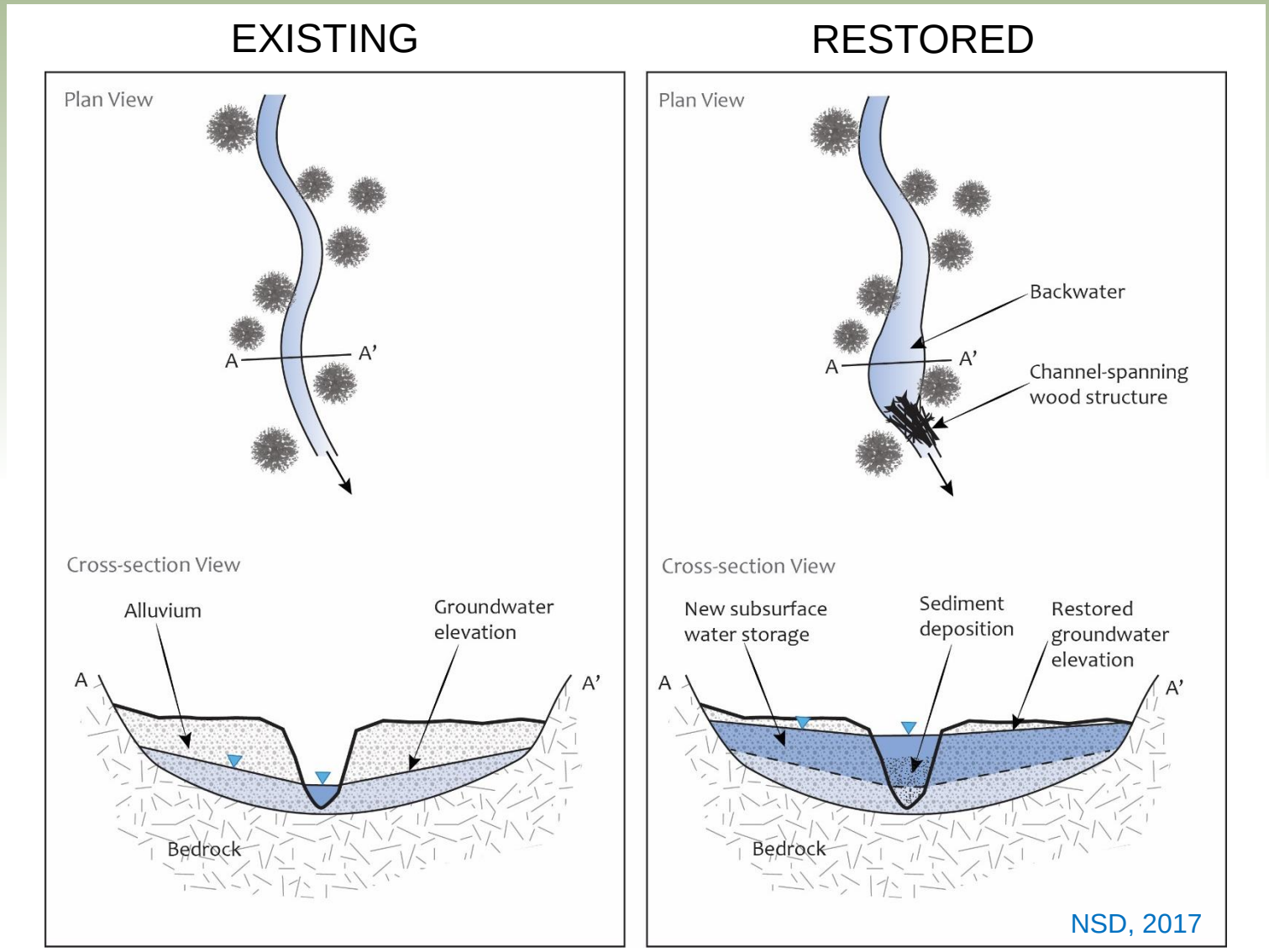
Chelan County: Alluvial Storage Pilots

- Commerce Grant to Chelan County to build natural storage log jams
- Natural storage has benefits over traditional surface impoundments (environmental footprint) and aquifer storage (cost)
- Shifts hydrograph against climate change trend
- Water supply benefits capable of meeting rural supply problems
- Water quality, temperature benefits
- Project in Poison Creek (Wenatchee)

Poison Creek near Cashmere, WA

- Piezometers used to monitor shallow groundwater
- Streamflow measurements
- County code coordination
- Ongoing O&M
- Improvements over time
- About 20 acre-feet of potential storage

Restoring Natural Water Storage



Chelan County Mitigation Example

- **Effort high (in kind alternatives evaluated)**
- **Water for water found**
- **In place found**
- **In time found / not found (being studied)**
  - **Net environmental benefits sought by fisheries co-managers**

What Criteria Exist for Avoidance?

- How long do you have to look for water-for-water mitigation?
  - Twisp is near Canada and looked for decades.
- How much money do you have to spend?
  - Twisp spent way above average market rate because there is no “upstream”.
- Is it different for each geographic locality?
  - Micro-climates in Yakima and northern counties are different.
- Is it different for public vs. private entities?
  - Does criteria for a city or county differ from a developer or industry?
- Does the purpose of use of the project matter?
  - E.g. is a fish hatchery the same as a farm or city or industry (e.g. bypass reaches)?
- Where do water markets fit?
- Where does condemnation fit?

What Criteria Exist for Minimization?

- How much of the project must be changed? How does this affect SEPA?
- Do you rely on existing standards or do you have to go further?
  - E.g. municipal conservation standard is 10%. Do you need to do more if this criteria is triggered?
- Do you have to sacrifice some elements of your project?
  - E.g. lawn watering vs. indoor domestic use is a common bank choice.
- Do you have to phase your project to allow for more time to find the "perfect" mitigation?
  - E.g. do you get 10 years of growth but not 20 years for the next increment of a municipal permit, or do you get it all?
- Is minimization quantitative, or qualitative, or consultation based?
  - If fisheries co-managers are on-board, where does that fit in?
- Does it matter if a basin has storage or not (or do you have to build it)?

What Criteria Exist for Compensation?

- Does “net” mean slightly better than neutral or are mitigation ratios used (e.g. 2:1 benefit)?
- Is fishery co-manager concurrence mandatory?
- Are in-time, in-kind, and in-place all equal?
- Can metrics be placed around in-time to make it streamlined?
  - E.g. if mitigation occurs in times of scarcity and offsets demand in times of abundance, then it is “net environmental benefit”.
  - E.g. in most basins moving from summer to winter would be beneficial most of the time.
- If mitigation moves the hydrograph opposite of the push of climate change, is that sufficient?

Questions?

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